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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,596	11/27/2001	Alexander V. Pyntikov	57357-017	8700

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Washington, DC 20005-3096

EXAMINER

PHAM, LEDA T

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/993,596	Applicant(s) PYNTIKOV ET AL.	
	Examiner Leda T. Pham	Art Unit 2834	<i>MW</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1 - 18 in Paper filed on 10/03/03 is acknowledged.

2. Since Applicant did not provide any traversal arguments to the restriction requirement, the response is considered as election without traverse; therefore, the election/restriction is made FINAL.

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract used legal phraseology "comprising" on line 4. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1, 3, 10 – 12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Skybyk (U.S. Patent No. 5,216,339).

Referring to claim 1, Skybyk teaches a rotary electric motor (figure 1 –2) comprising:
a permanent magnet rotor (1) having a plurality of permanent magnets (12) disposed in an annular ring configuration;
a stator (27) comprising a plurality of separate, ferromagnetically isolated electromagnets (24) in an annular ring configuration, windings of the electromagnets selectively energized to form magnetic poles of alternating polarity (lines 18 – 22, column 5) along a radial air gap (25) that separates the stator from the rotor; and
a plurality of separate power modules, each of said modules corresponding to a respective stator electromagnet for providing energization current thereto (figure 13).

Referring to claim 3, Skybyk teaches a rotary electric motor wherein each of said power modules comprises:

drive circuitry (34); and
electronic switches (31) connected to a power source (32) and the respective electromagnet, the switches being responsive to drive circuitry for directing current pulses from the power source to a winding of the electromagnet.

Referring to claim 10, Skybyk teaches the rotary electric motor, wherein the motor is enclosed within a shielded housing (22) thereby to avoid external electromagnetic interference (figure 1).

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Referring to claim 11, Skybyk teaches the rotary electric motor wherein the plurality of separate power modules are contained within the stator radially inward of the stator electromagnets (figure 1).

Referring to claim 12, Skybyk teaches a rotary electric motor (figure 1) comprising:
a permanent magnet rotor (1) having a plurality of permanent magnets (12) disposed in an annular ring configuration; and
a stator (27) coaxial with the rotor and separated therefrom by an axial air gap (25);
wherein the stator comprises a plurality of independent stator units, each of the units comprising a ferromagnetically isolated core having a winding (24) formed thereon and circuitry for controlling energization of the winding (figure 13).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by Hsu (U.S. Patent N. 6,586,857).

Referring to claim 12, Hsu teaches a rotary electric motor (figure 1) comprising:

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a permanent magnet rotor (31) having a plurality of permanent magnets (311) disposed in an annular ring configuration; and

a stator (21) coaxial with the rotor and separated therefrom by an axial air gap;

wherein the stator comprises a plurality of independent stator units, each of the units comprising a ferromagnetically isolated core having a winding (211) formed thereon and a rotor position sensor (411).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 4 – 6, 8 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skybyk in view of Hsu.

Referring to claim 2, Skybyk teaches the claimed invention, except for the added limitation of the stator is encompassed within the rotor.

Hsu teaches a rotary electric motor where the stator can either inside or outside the rotor (figure 3B, 4B) for generating a magnetic flux in between the stator and the rotor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Skybyk's motor with the stator encompassing with the rotor as taught by Hsu. Doing so would generate a magnetic flux in between the stator and the rotor.

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Referring to claim 4, Hsu teaches the rotary electric motor wherein each of said power modules further comprises a circuit board (figure 1) having mounted thereon respective drive circuitry (61) and respective switches (51).

Referring to claim 5, Hsu teaches the rotary electric motor further comprising a sequence controller connected to the drive circuitry of each module for applying thereto timing signals (figure 1).

Referring to claim 6, Hsu teaches the rotary electric motor further comprising at least one rotor position sensor (411) for providing output signals indicative of rotor position and wherein said sequence controller is responsive to said output signals.

Referring to claim 8, Hsu teaches the rotary electric motor wherein each of said power modules further comprises: a rotor position sensor (411) for providing output signals indicative of rotor (311) position with relating to the respective power module (61); and a sequence controller (51) connected to the drive circuitry and to said rotor position sensor for providing timing signals for controlling the operation of said switches (figure 1).

Referring to claim 9, Hsu teaches the rotary electric motor wherein direction of current flow and duration of each current pulse is determined by selected activation of the switches by the drive circuitry (figure 1).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skybyk as applied to claim 3 above, and further in view of Naito (U.S. Patent No. 5,808,448).

Referring to claim 7, Skybyk teaches the claimed invention, except for the added limitation of the power source comprising a plurality of batteries.

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Naito teaches in his invention a power source with plurality of batteries (1, 2, 3) for operating an electric vehicle, with each of the batteries supplying power to only one of said modules (10).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power source with a plurality of batteries as taught by Naito. Doing so would be able to operate an electric vehicle.

9. Claim 13, 15 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu in view of Heidelberg et al. (U.S. Patent No. 5,486,727).

Referring to claim 13 and 15, Hsu teaches the claimed invention, except for the added limitation of each of the stator units having a power supply.

Heidelberg teaches in his invention a stator where each of stator unit connecting to a power supply (lines 40 – 44, column 1) to permit optimal regulation of each stator unit in accordance with a position a rotor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hsu's motor with each of stator unit connect to a power supply as taught by Heidelberg. Doing so would permit optimal regulation of each stator unit in accordance with a position of a rotor.

Referring to claim 16, Hsu teaches a rotary electric motor wherein the rotor surrounds the stator (figure 4B).

Referring to claim 17, Hsu teaches a rotary electric motor wherein said circuitry comprises: electronic switches (511) connected to the power source and the respective electromagnet winding; and a switch driver (515) responsive to a controller for applying driving

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pulses to the switches to apply current pulses from the power source to a winding of the electromagnet.

Referring to claim 18, Hsu teaches a rotary electric motor wherein each of the units is a structurally self-contained component.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Leda T. Pham
Examiner
Art Unit 2834

LTP
January 15, 2004


BURTON S. MULLINS
PRIMARY EXAMINER